SCREENING REPORT

REMEDIATION OF URBAN PROPERTIES
SYDNEY, NOVA SCOTIA

Prepared by

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

For ENVIRONMENT CANADA

JULY 2002

PROJECT INFORMATION

Project Name:	Remediation of urban properties
Project Location:	An urban area of the Cape Breton Regional Municipality centred on the Coke Ovens site and extending three kilometres in all directions
Purpose of the Project:	To remediate urban properties as recommended by a recent health risk assessment report
Responsible Authority:	Environment Canada
Environmental Assessment Trigger:	Authorizing payments to the proponent for the purpose of enabling the project
Environmental Assessment Process:	Screening of the project and preparation of a screening report
Environmental Assessment Start Date:	April 5, 2002
Project Proponent:	The Province of Nova Scotia

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SUMMARY OF THE ASSESSMENT

The Muggah Creek environmental site assessment involved the collection of soil and groundwater samples from various locations within the area of Whitney Pier north of the Coke Ovens site. The site assessment report identified contaminants in soil above Canadian Council of Ministers of the Environment guidelines for residential properties. In response to the elevated levels of contaminants, the Joint Action Group for the Environmental Clean-up of the Muggah Creek Watershed passed a resolution asking government to take immediate action.

Subsequently Health Canada contracted Public Works and Government Services Canada (PWGSC) to:

- conduct a chronic health risk assessment (HRA) associated with the residential soils in the area. The HRA was required to address community concerns relating to soil and water contamination.
- develop short-term exposure levels. The short-term exposure levels were part of interim measures to address management of potential health risks until the chronic HRA results were available.
- study environmental conditions in an area centred on the Coke Ovens site and extending three kilometres in all directions.

An outcome of the above studies was a recommendation for the remediation of identified urban properties. Governments made a commitment to the community to follow the recommendations of the chronic HRA reports. Consistent with this commitment, the Province of Nova Scotia offered a voluntary remediation program for 87 properties. Remediation activities will include soil removal, removal of structures, construction/ maintenance, landscaping, and related activities.

Environment Canada is a participant in the community-based Environmental Clean-up of the Muggah Creek Watershed. One of the goals of this initiative is to strive for the achievement of remediation of historical contamination within the watershed. Situated within the watershed are the Sydney Tar Ponds, the Coke Ovens site, and Whitney Pier. As part of its responsibilities relating to the watershed clean-up, Environment Canada is considering assisting the Province in funding the remediation of the urban properties. Consequently, Environment Canada is a *Responsible Authority* pursuant to the *Canadian Environmental Assessment Act* (CEAA) and must ensure that an environmental assessment of the proposed remediation work is carried out. This screening report defines the scope of the project to be assessed, identifies potential environmental effects, and identifies measures to mitigate potential environmental effects to insignificant levels.

The draft environmental assessment report was reviewed and commented upon by government and the public before it was finalized. The draft report was advertised and flyers requesting public input were distributed to area residents. All comments received during the review period were considered in development of the final screening report.

The screening report concludes that significant adverse environmental effects are not likely to result from the remediation project, given the outlined mitigation measures. Public concerns do not warrant a referral of the project to a mediator or a review panel.

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1.0 INTRODUCTION

The Muggah Creek environmental site assessment involved the collection of soil and groundwater samples from various locations within the area of Whitney Pier north of the Coke Ovens site. The site assessment report (JDAC Environment Limited 2001a) identified contaminants in soil above Canadian Council of Ministers of the Environment (CCME) guidelines for residential properties. In response to the elevated levels of contaminants, the Joint Action Group for the Environmental Clean-up of the Muggah Creek Watershed (JAG) passed a resolution asking government to take immediate action.

Subsequently Health Canada contracted Public Works and Government Services Canada (PWGSC) to:

- conduct a chronic health risk assessment (HRA) associated with the residential soils in the area. The HRA was required to address community concerns relating to soil and water contamination.
- develop short-term exposure levels. The short-term exposure levels were part of interim measures to address management of potential health risks until the chronic HRA results were available.
- study environmental conditions in an area centred on the Coke Ovens site and extending three kilometres in all directions.

An outcome of the above studies was a recommendation for the remediation of identified urban properties. Acting on this recommendation the Province of Nova Scotia has proposed the remediation of 87 properties. Figure 1 shows the area of Whitney Pier where 75 sites are proposed for remediation. Figure 2 shows the three kilometer zone in which the remainder of the sites are located. Remediation activities will include soil removal, removal of structures, construction/maintenance, landscaping, and related activities.

The project area consists of a combination of residential, commercial, recreational, undeveloped, and industrial properties located within an urban area of the former City of Sydney, now part of the Cape Breton Regional Municipality (CBRM). The area of Whitney Pier north of the Coke Ovens site, where most of the remediation activities are scheduled to occur, consists of the following streets: Frederick Street, Tupper Street, Laurier Street, Currys Lane, Hankard Street, and a portion of Lingan Road. The surrounding three kilometre zone does not include the Coke Ovens site itself, the adjacent steel plant site, or the adjacent landfill site.

1.1 Purpose of the Project

The purpose of the project is to remediate urban properties. The goal is to minimize risks to human health resulting from exposure to contaminated substances.

1.2 Project Proponent

The project proponent is the Province of Nova Scotia as represented by the Sydney Tar Ponds Agency (STPA).

The proponent is developing remedial action plans (RAPs) for each property. STPA will be

FIGURE 1. WHITNEY PIER NORTH OF THE COKE OVENS SITE

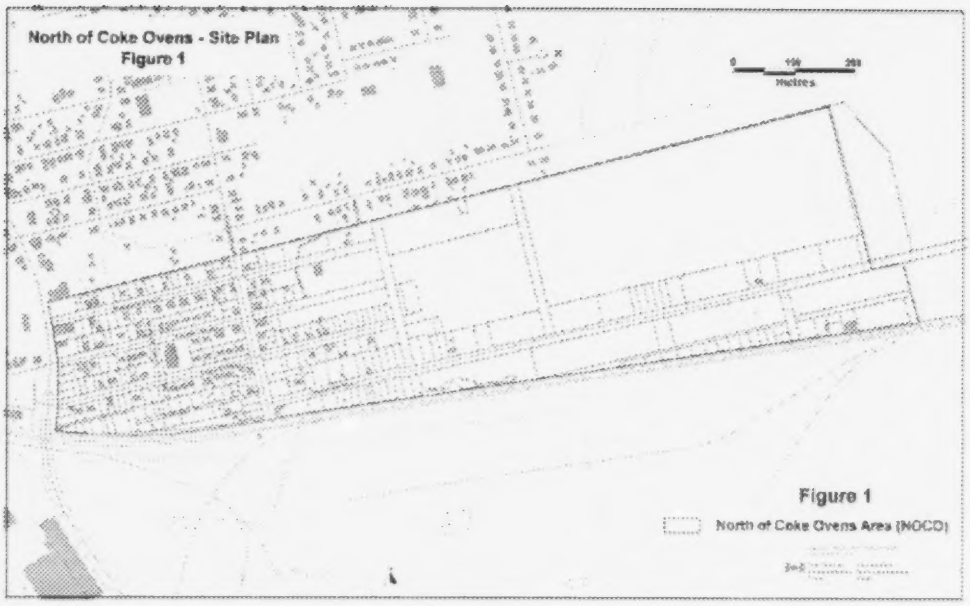
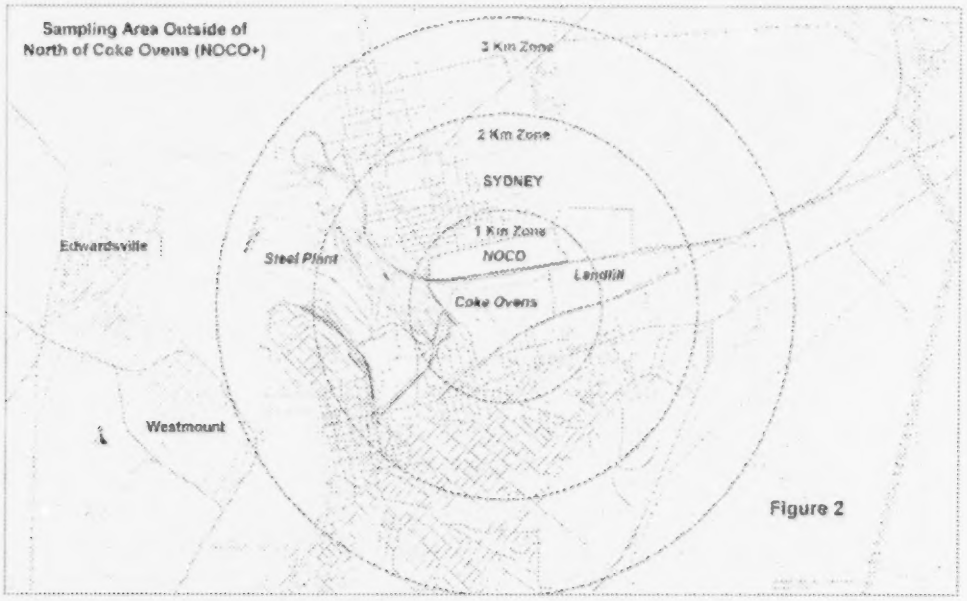


FIGURE 2. THREE KILOMETRE ZONE



the project managers. A project consultant has been hired to oversee the work on the project. Private contractors will carry out the work.

1.3 Scope of the Project

The project scope includes:

- soil removal from urban properties;
- removal, re-instatement, and construction of oil tanks, decks, steps, sheds, garages, etc.;
- foundation repairs where soil removal in basements is not feasible;
- maintenance activities such as removal of sediment from basement sumps, repairing cracks in basements, installing drains and sumps where basement foundation repair is not feasible;
- landscaping to replace topsoil, grass, gardens, vegetation, walkways, and driveways;
- trucking of clean fill and topsoil to the properties being remediated;
- trucking of contaminated soil, construction and demolition debris, and other wastes to the municipal solid waste disposal facility; and
- construction of a temporary roadway.

Activities at the sites that will be providing fill and topsoil, and trucking of materials from these sites, are not included in the project scope. This decision is based on the understanding that the sites providing the materials will have valid provincial environmental approvals.

The scope of the environmental assessment includes the remediation sites, the urban areas immediately adjacent, and the trucking route to municipal solid waste disposal facility. The assessment evaluates the short-term and long-term environmental effects resulting from the project.

1.4 Project Schedule

The project is scheduled to commence in early July 2002 and to be completed during the fall of 2002. The proponent anticipates that remediation will be completed on a systematic basis and will likely employ a series of contractors experienced with environmental remediation projects.

1.5 Environmental Assessment of the Project

Environment Canada is a participant in the community-based Environmental Clean-up of the Muggah Creek Watershed. One of the goals of this initiative is to strive for the achievement of remediation of historical contamination within the watershed. The Sydney Tar Ponds, Coke Ovens site, and Whitney Pier are all situated within the larger Muggah Creek Watershed area. As part of its responsibilities relating to the watershed clean-up, Environment Canada is considering assisting the Province in funding the remediation of the urban properties. Consequently, Environment Canada is a *Responsible Authority* pursuant to the *Canadian Environmental Assessment Act* (CEAA), and must ensure that an environmental assessment of the proposed remediation work is carried out.

The environmental assessment of the remediation project is being conducted at the screening level. This screening report identifies potential environmental effects of the

proposed project and the effects of the environment on the project. It includes an assessment of cumulative effects that could develop in conjunction with other projects and effects arising from accidents or malfunctions. Consideration is given to mitigation measures that are technically and economically feasible.

The descriptions of activities and related requirements provided in the remainder of this report reflect the current expectations for the project. RAPs are not finalized and modifications during the final design stages, and as the project is implemented, are inevitable. Environment Canada will ensure that project modifications, the potential for new environmental effects, and the effectiveness of existing measures to mitigate those effects are evaluated throughout the duration of the project and that appropriate is action taken if required.

1.6 Sources of Information

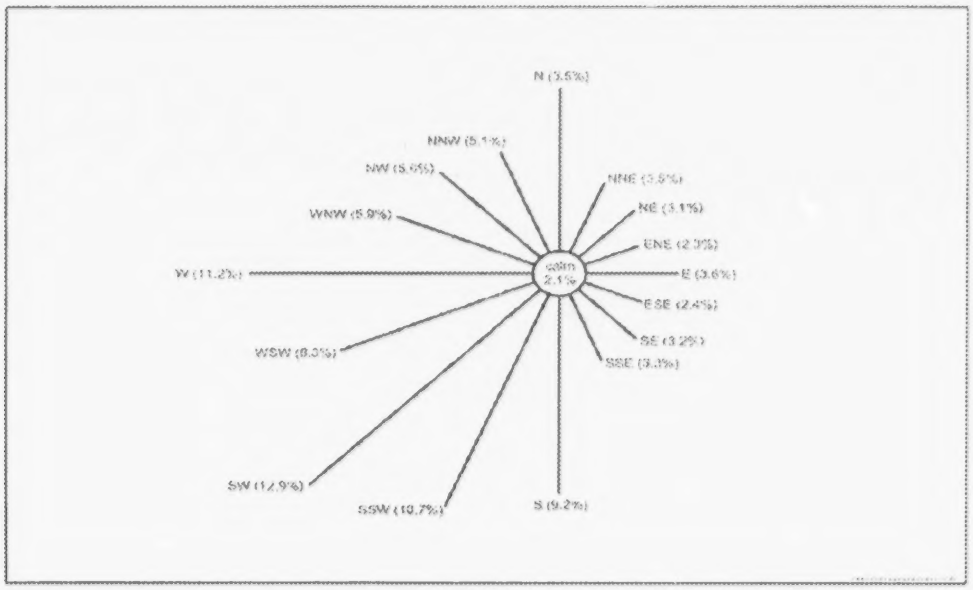
The majority of the information used in the preparation of this report was taken from existing sources. An archaeological resource impact assessment is the one exception (Fry 2002). This work was conducted as part of the environmental assessment.

2.0 DESCRIPTION OF THE ENVIRONMENT

2.1 Climate / Air Quality

Sydney's climate is influenced by its proximity to the Atlantic Ocean and by prevailing westerly winds. Canadian Climate Normals Data (1941-1990) for the Sydney Airport climate station indicate that the area receives approximately 1480 mm of precipitation annually. Measurable amounts of precipitation are recorded for 189 days per year with an extreme daily precipitation event of 129 mm. The mean annual temperature is 5.5°C. Extreme temperatures of -25.6°C to 35.0°C have been recorded. Prevailing winds in Sydney generally blow from the west in winter and from the southwest in summer. During storm events, winds from the southern quadrants tend to dominate. Winds from the easterly directions have the lowest frequency of occurrence. The average annual wind speed, from all directions, is 20 kilometres/hour. Winds are generally the strongest in winter (Environment Canada 1993). Figure 3 is a wind rose diagram for Sydney.

FIGURE 3. SYDNEY WIND ROSE DIAGRAM



Both provincial and federal governments monitor air quality in Sydney. Ambient air quality monitoring was carried out around the Coke Ovens site and other locations from September 1998 to January 2001 (AGRA Earth and Environmental Limited 2000). Results show that the general air quality is comparable to, or in some cases better than, air quality in other Canadian and American urban areas. The results also show that, over the past 30 years, there has been a reduction in particulate matter levels in the project area. The closure of the Coke Ovens site and changes in steel making are likely factors.

An expanded and enhanced ambient air-monitoring program was put into place by governments in November 2001. This program samples air quality in the vicinity of the Coke Ovens, Tar Ponds, and other Sydney areas every six days. The monitoring program collects 24-hour samples for laboratory analysis and conducts real-time monitoring to provide immediate air quality information when needed. The program includes monitoring stations on Frederick and Henry Streets, close to some of the properties to be remediated.

2.2 Topography

The Muggah Creek watershed area is relatively level coastal lowland that drains into Sydney Harbour via the Muggah Creek and its tributary system. The properties to be remediated in Whitney Pier and within the 3 kilometre radius are all in areas with a relatively flat ground surface.

2.3 Geological Conditions

Natural geology in Sydney consists of glacial till overburden overlying sedimentary bedrock. The till is silty sand to silty clay with some gravel. Bedrock is primarily sandstone. In the area of Whitney Pier where properties are to be remediated, sandstones and mudstones lie underneath discontinuous areas of disturbed and undisturbed till, fill, and top soil. Areas of fill contain washed granular materials, peat, muck, ash, slag, coal fines, wood chips, creosote timbers, concrete, glass, and brick (JDAC Environment Limited 2001a).

2.4 Hydrology / Aquatic Environment

Much of the project area is located within the Muggah Creek watershed. This watershed is divided into two components: the Coke Oven Brook watershed makes up the northern portion and the Wash Brook watershed makes up the southern portion. The entire watershed area is approximately 24 square kilometres. Watercourses that drain into Coke Oven Brook include Whitney Pier Brook, Radar Brook, Frederick Street Brook, DOMTAR Brook, Incinerator Marsh, Cositt Lake, and Cagney Brook. The Wash Brook watershed is made up of Mud Lake, Gilholmes Lake, and Wash Brook. Both Coke Oven Brook and Wash Brook flow into Muggah Creek.

The marine and freshwater aquatic habitats of the Muggah Creek watershed have been disturbed (CBCL Limited and Conestoga-Rovers and Associates 1999). Many of the streams in the lower part of the watershed have been channelized and/or piped. Physical and chemical factors have adversely effected water quality, stream hydrodynamics and habitat productivity.

A recent fish survey of Coke Oven Brook and its tributaries identified four species of fish--Brown Bullheads, Mummichogs, Banded Killifish, and Ninespine Sticklebacks (Foulds 2001). The condition of the fish captured was generally very poor.

Two watercourses are located in close proximity to the proposed remediation sites. Whitney Pier Brook actually flows through two of the proposed remediation sites. Cagney Brook is located approximately 70 metres from a proposed remediation site located within the three-kilometre radius.

The groundwater in the shallow bedrock of the Muggah Creek watershed flows generally north/northeast to south/southwest (JDAC Environment Limited 2001a).

2.5 Species at Risk

The recent environmental assessment for the closure of the Sydney Landfill found that it was unlikely that the project would interact with species at risk (Environment Canada 2001a). That conclusion, based on records for species at risk in the Sydney area and their habitat requirements, is equally valid for this remediation project.

2.6 Land Use

Land use planning for the project area is addressed in the CBRM Municipal Planning Strategy and Land Use Bylaw. The area of Whitney Pier located north of the Coke Ovens site is zoned low density residential, recreational, and downtown commercial. It is approximately 70 hectares in area and consists of vacant lands, residential, and commercial properties. The area is bounded on the north and west by homes and commercial properties. To the south is the rail line and the former Coke Ovens site. The Municipal Ash Industrial Disposal (MAID) site, CBRM's solid waste disposal facility, is to the southeast.

The remainder of the project area consists of a combination of residential, commercial, recreational, undeveloped, and industrial properties.

2.7 Health

The public in the project area has a high level of concern with the environment and its effects on human health. A number of health studies have been completed in recent years. Most have focused on Sydney's elevated rates of cancer (Manzer, 2001).

Ongoing health studies include:

- a study funded under the Environmental Clean-up of the Muggah Creek Watershed to examine early pregnancy losses in CBRM, contaminant levels in pregnant women, and the experiences and views of Sydney families on reproductive health (Manzer 2001);
- a Health Canada funded follow-up study to an earlier mortality analysis to look at factors contributing to the elevated rates of disease (Manzer 2001);
- a Toxic Substances Research Initiative funded case control study on breast, lung and colon cancer in the Sydney area is being undertaken by Drs. Band and Krewski (P. Moore, Health Canada, personal communication).

In addition to the above studies, a survey of residents surrounding the Tar Ponds/Coke Ovens site is planned to gather health information. This survey is being undertaken by the People's Health Commission, with support from the Sierra Club of Canada, the International Institute of Concern for Public Health, Canadian Association of Physicians for the Environment and the Canadian Autoworkers (Cape Breton Post 2002).

2.8 Cultural Heritage

Three Whitney Pier churches are recognized as Nova Scotia Provincial Heritage Sites. The St. Phillips African Orthodox Church is located on 57 Hankard Street and is the only African Orthodox Parish in Canada. The Holy Ghost Ukrainian Greek Catholic Church, located on

West Street, is the only Ukrainian Church east of Montreal and serves the largest Ukrainian community in the Atlantic area. St. Mary's Polish Church is located on Wesley Street (Whitney Pier Historical Society 2002).

Other cultural landmarks located in Whitney Pier include the United Church Mission (Community Hall and Whitney Pier Day Care), Menelik Hall (Ethiopian Community Club Ltd.), and the Hankard Street Community Center (J. Babin, CBRM, personal communication).

An archaeological resource impact assessment was carried out for the Whitney Pier area of the remediation project (Fry 2002). The assessment concluded it is not likely that any archaeological resources would be encountered during the proposed project activities and that no further assessment would be required.

As a result of these findings, significant effects of the project on cultural heritage are considered to be unlikely and will not be given further consideration.

2.9 Traditional Use of Land and Resources by Aboriginals

The Mi'kmaq Nation used Sydney Harbour and surrounding lands for hunting, fishing, transportation, and ceremonial purposes. Membertou First Nation belongs to the greater tribal group of the Mi'kmaq Nation and it is located four kilometres southwest of the centre of the project site. The community has a population of about 1000 residents.

Project activities are limited to urban properties and roadways. There is little or no potential for activities to affect the current use of land and resources by aboriginals for traditional purposes.

The Mi'kmaq place historical value on the lands in the project area. The federal government has worked with, and will continue to work with, Membertou and other representatives of the Mi'kmaq to ensure the interests of aboriginals are respected in the planning for and implementation of the Environmental Clean-up of the Muggah Creek Watershed.

3.0 PROJECT DESCRIPTION

The proponent is developing individual RAPs for each of the 87 remediation sites. The information in the individual RAPs is confidential. The sections that follow describe all activities expected to be included as part of the project. Each RAP will include one or more of the following activities.

3.1 Soil Removal

On selected properties heavy equipment will remove soil to a depth of 60 cm. On a few properties, soils may be removed to slightly greater depths. Soils in the vicinity of trees and shrubs will be manually excavated and the area covered with geo-membrane prior to replacing the topsoil. Soils will also be removed from some basements.

3.2 Removal and Demolition

When necessary to complete site remediation, oil tanks, decks, steps, sheds, garages, and other structures will be removed intact. Fuel oil will be removed from tanks by contractors licensed for such activities. All tanks to be removed and replaced are aboveground domestic tanks with volumes less than 4000 liters. Demolition of some structures will be necessary. CBRM Building Bylaw permits will be required. (For a listing of legislation and guidelines relevant to this assessment, see Appendix I.)

3.3 Construction/Maintenance

After contaminated soils have been removed, structures which were removed or demolished will be reinstated or re-constructed. For a few properties, there may also be a need to replace the basement with a crawl space and put on an addition to replace the lost space. This work will be subject to a permit. Contractors will use standard construction materials and methods. It is expected that most home fuel oil tanks that have been removed will be replaced with new ones.

Where basement soil removal is not practical, dirt flooring will be capped with concrete. Basement sumps may be cleaned and sumps may be installed. Leaks in cracked basements will be repaired using sealants.

3.4 Landscaping

Contractors will place 50 cm of clean fill and 10 cm of clean topsoil in areas where soil has been removed. In garden areas, topsoil replacement will be increased to 25 cm. The clean fill and topsoil will be obtained from local operations with valid environmental approvals issued by the Nova Scotia Department of Environment and Labour (NSDEL). Materials will meet the technical specifications outlined in the contract of work. Driveways and walkways will be repaired or replaced, vegetation will be planted and gardens replaced.

3.5 Waste Disposal

Contaminated soil, oil tanks, and construction and demolition waste will be disposed of at the MAID site, located to the southeast of Whitney Pier. Acceptability of the waste to the MAID site will be determined by existing provincial and municipal waste disposal requirments. The soil will be placed on top of the clay cap to form part of the two to three

foot layer of frost protection needed as part ongoing closure of the Sydney Landfill portion of the MAID site.

3.6 Traffic

Heavy equipment will be moving on and off individual properties during the remediation program. Trucks loaded with wastes will be leaving the remediation sites and traveling to the MAID site.

3.7 Temporary Road Construction

A temporary road will be constructed to improve access to the MAID site and to reduce traffic on Sydney streets. The proposed roadway will extend from the east end of Frederick Street to the MAID site. A temporary crossing will be installed across the railroad tracks that separate Whitney Pier from the MAID site. Flag persons will be stationed at the railway crossing to control traffic. Temporary barriers will be installed when the crossing is not in use. A temporary culvert will be required to cross a small brook in this area and will require a NSDEL site inspection and possibly an approval.

3.8 Health and Safety

A Health and Safety Program is a component of the proposed project. Contractors will be responsible for preparing Health and Safety Plans (HSPs) which will then be submitted to STPA for review for consistency with Nova Scotia Occupational Health and Safety Regulations.

3.9 Environmental Protection

Similar to health and safety requirements, the proponent will require contractors to develop an Environmental Protection Plans (EPP). An EPP outlines controls that can be used to mitigate adverse impacts during the project activities. These controls are intended to maintain public safety, protect the environment and minimize disturbances. An EPP for this project will, at a minimum, address erosion and siltation. Monitoring of air-borne dust will be required and will be conducted by the proponent or by an environmental consultant hired by the proponent.

3.10 Community Relations

During the development and release of the HRAs that led to this project, both the provincial and federal governments established an office in Whitney Pier. It is located in the former Bobyk building at the corner of Frederick Street and Lingan Road (8 Frederick Street). The office, part of ongoing efforts to maintain good community relations, is intended to provide residents with information on the risk assessment and proposed remediation activities. It also provides residents with a convenient method for reporting complaints. The office is to remain open as part of the remediation project. In addition, the STPA plans to support summer recreation programs for children living in the area.

4.0 PROJECT – ENVIRONMENT INTERACTIONS

4.1 Effects of the Project on the Environment

CEAA requires a decision as to whether, after taking into account the implementation of mitigation measures, a project is likely to cause significant adverse environmental effects. The project's physical activities, and the potential environmental effects that occur due to these activities effects, are listed in Table 1. All physical activities are included in the table, however, only those components of the environment that are expected to be affected by a project activity are listed. Potential effects are classified as beneficial or adverse. A blank indicates that a potential effect, prior to mitigation, is unlikely. Professional judgment was used to complete the classification and in the later determinations of the significance of adverse effects.

The project will result in environmental improvements. Its purpose, remediation of urban properties, is an outcome of a HRA recommendation to reduce risks to human health. The HRA was highly conservative and it recognized a lack of empirical evidence for human exposure to substances that could cause health concerns (JDAC Environment Limited 2001b). Nevertheless, it is reasonable to conclude that the project will result in improvements in soil quality, a related but undetermined lowering of the risk to human health, and related to the improved environmental conditions, socio-economic benefits.

The remainder of this section addresses potential short-term adverse environmental effects likely to be caused by the project, mitigation measures, and the significance of those effects following mitigation.

4.1.1 Water Quality

Soil removal and landscaping could result in problems with siltation. The project's schedule was selected by the proponent recognizing that work conditions were best during summer months. This schedule reduces the risk of siltation problems. The proponent is requiring contractors to develop EPPs. Erosion and siltation control will be addressed in these plans.

The temporary crossing of the stream could result in siltation problems but the installation of the culvert will follow provincial legislation for culvert installations and minimal impact is expected. Given the measures in place to minimize siltation, the nature of the activities and the topography in the project area, significant adverse effects on water quality are not likely. Additional mitigation is not required.

4.1.2 Air Quality

Some of the project activities may result in local and temporary effects on air quality. Air-borne dust is the only concern identified as likely to be significant. Since the concern relates to human health, it is addressed in the following section.

TABLE 1. POTENTIAL EFFECTS OF THE PROJECT ON THE ENVIRONMENT

Project Activities	Soil Quality	Water Quality	Air Quality	Health and Safety			Socio-economics
				Public	Resident	Worker	
Soil Removal	+	-	-	+	+	-	+
Demolition			-	-	-	-	
Construction/Maintenance				-	-	-	+
Landscaping	+	-	-	-	-	-	+
Traffic			-	-		-	
Temporary Road Construction		-	-	-		-	

Environmental effects rated as follows: + = effect beneficial; - = effect adverse.

4.1.3 Health and Safety

Health and Safety of the Public

The project may present short-term risks to public safety. These risks are in relation to unauthorized access to work areas and increased truck traffic. The contractor HSPs will address access to work sites. Contractors will be responsible for limiting access to authorized persons and for ensuring anyone at the work site, including visitors, are provided with appropriate personal protective equipment. The proponent and its project consultant will maintain oversight responsibilities.

Public safety is also a concern in relation to construction equipment moving on and off individual properties, public use of the temporary road at the railroad crossing, and unauthorized public access to the MAID site. These issues will be addressed in the HSPs. Requirements typical of projects of this nature will be established and will likely involve some combination of temporary barriers, flag persons, and other measures.

Truck traffic in Whitney Pier will noticeably increase as will the risk of traffic accidents. The temporary road was included in the project as a means of reducing the traffic on Sydney streets. To the extent possible, work in Whitney Pier will be conducted in a phased area-by-area approach with the objective of keeping truck traffic in the neighborhood to a minimum.

Air-borne dust, in the form of particulate matter, could be a problem for people adjacent to the work areas and along truck routes. The proponent has included, as part of the project, measures that address this concern:

- trucks leaving for the MAID site will have boxes covered,
- standard construction procedures and street cleaning will be employed to keep the trucks clean and minimize the accumulation of soils on public roadways;
- dust suppressants will be used, when necessary;
- use of the temporary route to the MAID site will minimize dust levels in the community,
- soil and fill will be wetted when justified by air monitoring results or public complaints, and
- particulate matter in air in the project area will be monitored under the air monitoring program outlined below.

Real-time air monitoring for Total Suspended Particulate (TSP) matter will be conducted on and around the properties being remediated. An STPA representative will select specific monitoring locations on a daily basis according to an evaluation of the weather conditions (primarily wind direction) and clean-up activities. A direct reading instrument will be used to provide immediate (real time) measurement of TSP levels. In addition to downwind work area monitoring, TSP measurements will be taken at intervals around the residential property.

The Province currently regulates TSP levels at 120 $\mu g/m^3$, based on a 24-hour averaging period. As a conservative measure, this 24-hour standard will be used as the short-term ambient air action level (AAAL) to ensure control measures are employed in a timely and effective manner. Should either the work area activity on the residential property or the

perimeter monitoring measurements cause the short-term AAAL to be exceeded, a comparison of upwind and downwind readings will be made. The field inspector will note the exceedance and notify the project consultant who will determine what addtional control measures will be implemented.

The results from the short-term (real-time) monitoring will be suplemented by 24-hour ambient air monitoring monitoring at the two nearby monitoring stations (Frederick Street and Henry Street). These stations monitor TSP, particulate matter less than or equal to 10 microns (PM_{10}), metals, polycyclic aromatic hydrocarbons (PAHs) and volatile organic compounds (VOCs) every 6 days. During the initial period of the remediation activity, the 24-hour monitoring will be supplemented by increasing the frequency from 6 days to every 3 days at the two fixed stations and monitoring for TSP, PM_{10} and metals. After one month, the ambient air monitoring program will be reevaluated and adjusted to reflect monitoring results and levels of concern.

In addition to the two fixed stations, a mobile 24-hour station is available for use in the program should early monitoring results indicate a need or should special circumstances arise.

Due to the operation of heavy equipment in close proximity to residential dwellings, there is potential for annoying levels of noise. Noise from construction projects is often viewed by the public as being short-term and a necessary price for growth and improvement. For this project, which is being undertaken in the interest of the public good, elevated noise will be both short-term and sporadic.

To reduce the risk of annoying residents, the project includes the following measures:

- heavy equipment will be operated during daylight hours only (approximately 7 a.m. to 7 p.m.), six days per week,
- to the extent possible, work will be conducted in a phased area-by-area approach thereby reducing disturbances to any one area to the shortest time-frame practical,
- use of the temporary road will reduce the community's exposure to noise,
- equipment, including exhaust systems on equipment, will be in good running order, and
- the community office established by governments will be an effective mechanism for voicing and addressing complaints related to noise.

Given the measures proposed by the proponent to address risks to public health and safety, significant adverse effects are not likely. Additional mitigation is not required.

Health and Safety of the Resident

The possible environmental effects, mitigation measures, and conclusions described in the previous section apply also to the residents of the properties to be remediated. For all residents, but particularly small children, seniors, expecting mothers and those with existing health issues, the project's activities may pose additional physical risks. Generally these risks can be minimized by controlling access to work areas.

In some cases, use of properties by residents as remediation activities are underway will be inconvenient (e.g. blocked entranceways, power shut off, etc.) and possibly unsafe. When

these circumstances arise, the proponent will consider temporarily relocation of residents. Temporary relocation will be reviewed on a case-by-case basis as the remediation work proceeds, taking into account any concerns of the resident. Residents and/or property owners will review the relevant RAPs prior to implementation. Should the resident/owner not agree with the conditions of the RAP, work will not proceed.

Given the measures proposed by the proponent to address risks to the health and safety of residents, significant adverse effects are not likely. Beyond ongoing Environment Canada involvement in finalizing the protective measures for residents and ensuring these measures are appropriate, additional mitigation is not required.

Health and Safety of the Worker

The HRA that led, in part, to the project assessed the risk to industrial workers (JDAC Environment Limited 2001b). Despite the assumption of worker exposure to contaminated substances for a period of eight hours per day, five days per week, and 50 weeks per year for a period of 25 years, the study did not identify an unacceptable level of risk to workers.

Given the routine nature of the work, the low level of risk associated with working with contaminated substances, provincial regulatory requirements, and the project's own health and safety requirements, significant adverse effects on worker health and safety are not likely. Additional mitigation is not required.

4.2 Effects of the Environment on the Project

CEAA requires consideration of any change to the project that may be caused by the environment. The project design reflects this consideration in that the schedule is based, in part, on the need for good weather-related working conditions. The EPP will address the handling of the remediation work in the event of severe weather such as violent storms. Appropriate weather conditions for re-vegetation was another factor. No further project modifications are required.

4.3 Effects Related to Accidents and Malfunctions

Included among the requirements for the contractors' HSPs are measures addressing emergency response and hazard assessments. Given provincial regulatory requirements, and the project's own health and safety requirements, the risk of accidents and malfunctions occurring will be minimized. Significant adverse environmental effects are not likely.

4.4 Cumulative Environmental Effects

Consideration has been given to cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out. The remediation project, an outcome of existing environmental contamination, is one of a number of efforts in the project area to correct past practices. Others include a number of activities under the Environmental Clean-up of the Muggah Creek Watershed, the decommissioning of the steel plant, and CBRM's efforts to construct a sewage treatment plant at Battery Point. Completion of these projects will provide environmental improvements and cumulative socio-economic benefits for the project area.

The Whitney Pier properties to be remediated are close to other activities that could possibly result in cumulative and adverse environmental effects. However, with one possible exception—steel plant demolition--cumulative adverse effects are either unlikely or unlikely to be significant and no additional mitigation is required. The activities considered and the reasons for the expectations of no significant adverse effects are provided below.

Coke Oven Site, Demolition and Removal Activities

Environment Canada conducted an environmental assessment of this project (Environment Canada 2001b). The air quality modelling completed as part of the project demonstrated that air-borne particulate matter could be at levels of concern very close to the Frederick Street area of Whitney Pier. However, those predicted levels were associated with the removal of a coal pile and removal of the DOMTAR Tank. Presently, neither of these activities are scheduled to occur during the period of time expected for the property remediations.

In the event of schedule changes, Environment Canada, as part of its environmental assessment obligations for both projects, will ensure that appropriate mitigation measures are implemented to ensure cumulative environmental effects do not increase to levels of concern.

Sydney Landfill Leachate Management Project

Environment Canada also conducted an environmental assessment of this project (Environment Canada 2001a). Noise and air-borne particulate matter were identified as possible adverse effects in the east end of the Frederick Street area. The project is approximately half-complete with remaining activities scheduled to be completed by December 2002. To date air monitoring results have shown lower levels of particulate matter than expected. Environment Canada has actively sought information on any complaints relating to project noise. None have been received from the east end of Frederick Street.

Based on the low level of effects generated by the landfill project, and the localized and intermittent effects expected of the remediation project, cumulative adverse effects relating to air quality and noise are not expected.

Steel Plant Demolition

Demolition of the steel plant buildings began in August 2001 and is expected to continue until 2003. Should demolition activities occur at the east end of the site at the same time as remediation efforts are underway, there is a possibility of a cumulative air quality effect in Whitney Pier.

The Province, proponent of both the demolition and property remediation projects, has imposed requirements for environmental controls on demolition activities. The controls, wetting down structures, air quality monitoring, and establishing air quality trigger levels, reduce the likelihood of cumulative adverse air quality effects. To ensure mitigation

measures for both projects adequately address cumulative effects, Environment Canada will request that the proponent submit for review information on demolition activities scheduled to occur on the steel plant site during the summer and fall of 2002. Should the timing and location of activities favour a cumulative effect, Environment Canada will request that the proponent further reduce the risk of a cumulative effect by modifying the remediation program. Re-scheduling activities is one option.

Steel Plant Access Road and Bulk Commodities Terminal

The proponent is considering improving truck access to the steel plant site by constructing a new road. This road will cross the southern edge of Whitney Pier. Recently the proponent changed the expected start date of construction to beyond the fall of 2002.

Operations of a bulk commodities terminal on the west end of the steel plant site could begin as early as late summer or early fall 2002. Trucks were to reach and leave the site by way of the new access road after its completion. With the change in schedule, trucks entering and leaving the terminal will use roads that lead away from most of the remediation activities.

Cumulative adverse effects relating to air quality and noise are no longer anticipated as project schedules no longer overlap. In the event of schedule changes, Environment Canada, as part of its environmental assessment obligations, will ensure that appropriate mitigation measures are implemented to ensure cumulative environmental effects do not increase.

5.0 IMPLEMENTATION OF MITIGATION AND FOLLOW-UP

A technical specialist, independent of the proponent, PWGSC, and on-site contractors, will conduct inspections of remediation activities. The individual, hired as part of the Environmental Clean-up of the Muggah Creek Watershed, will have responsibilities for ensuring site activities comply with provincial regulatory requirements and reporting to Environment Canada on the implementation of mitigation measures.

Mitigation measures have been identifed but implementation details are not all finalized, particularly those relating to safety of residents and air monitoring. To ensure that the appropriate mitigation measures are implemented, Environment Canada will continue its involvement in the development of mitigation measures.

Environment Canada has a mechanism available to assist in ensuring implementation of mitigation measures. As administrator of federal funds, the department can use the funding mechanism to strongly influence the project proponent.

6.0 CONSULTATIONS

6.1 Project Related Consultations

At the start of the HRA that led to this project, PWGSC conducted interviews with individual property owners to obtain permission to access properties and conduct sampling. At that time, the rationale behind the intended program was explained in detail and comments were welcomed.

JAG and government held two meetings in Whitney Pier with members of the community. One was to explain the then proposed HRA and receive comments; the second to present the HRA results and receive comments.

Throughout the HRA and during the development of the RAPs, PWGSC has distributed pamphlets in the community that address the remediation project and related issues. Comments received have been incorporated into RAPs where appropriate.

Governments opened the previously mentioned office to provide project information directly to the community. The office remains in place. The RAPs will be reviewed with property owners. Work will not proceed without property owner agreement.

Government agencies consulted over the course of the HRA, and leading up to the design of the remediation project, include:

- Health Canada
- Nova Scotia Department of Health
- Nova Scotia Department of Environment and Labour
- Cape Breton Regional Municipality
- Environment Canada

The remediation project is part of the controversy that surrounds past and present environmental conditions in the project area. The HRA results have been disputed, community meetings have resulted in conflict and arrest, and some in the community are considering legal action against government that relates to past pollution incidents.

6.2 Consultations on the Draft Screening Report

In May 2002, a draft environmental assessment screening report and preliminary decision, pursuant to Section 18(3) of CEAA, was made available to governments, JAG, and the public for review and comment. The report was posted on the JAG web site and notification that the report was available appeared in the local newspaper. Copies of the draft environmental assessment were also available at the community office in the former Bobyk building at the corner of Frederick Street and Lingan Road in Whitney Pier (8 Frederick Street) as well as at Environment Canada's office in Sydney. Environment Canada also contacted a number of special interest groups, providing them with a copy of the draft screening report.

A pamphlet distributed in the community on May 25 and 26, 2002 provided an update on project activities and included a notice that the draft screening report was available for review.

Government agencies involved in review of the environmental assessment included:

- Health Canada
- NS Department of Environment & Labour
- NS Department of Tourism and Culture (Museums)
- Cape Breton Regional Municipality

Comments received up until June 24, 2002 were reviewed and considered in the preparation of the final screening report. Appendix II provides comments received from the public and responses to the comments.

7.0 ENVIRONMENTAL ASSESSMENT DECISION

Based on the information gathered to date, and the results of the screening, Environment Canada (the Responsible Authority) has concluded, in accordance with Section 20 of the *Canadian Environmental Assessment Act*, that **significant adverse environmental effects are not likely, taking into account implementation of the identified mitigation measures and that public concerns do not warrant referral of the project to a mediator or a review panel.**

Prepared by: Public Works and Government Services Canada

Approved by: _____
Richard Crowe
Director, Sydney Tar Ponds / Coke Ovens Clean-Up Project
Environment Canada

Date: July 2, 2002

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APPENDIX I APPLICABLE LEGISLATION AND GUIDELINES

Legislation	Section	Application to this Project	Responsible Agency
NS Environment Act – Air Quality Regulations	Section 4 – Criteria for ambient air quality expressed, as maximum permissible ground level concentrations shall not be exceeded.	Maximum permissible ground level concentration for Total Suspended Particulate (TSP) of 120 g/m^3 (24 hour mean).	NSDEL
NS Environment Act - Environmental Assessment Regulations	Schedule A - Class I Undertaking - Pit or quarry in excess of four hectares in area.	Required if a new pit or quarry is required to supply the clean fill or topsoil or if Minister declares a modification/expansion of a pit or quarry of any size to be an undertaking subject to an EA	NSDEL
NS Environment Act - Emergency Spill Regulations	Sections 74, 136, and 171	In the case of a fuel release during remediation or discovery of a release on a property, these reporting requirements apply.	NSDEL
NS Occupational Health and Safety Act & Associated Regulations	Section 82	On-site worker health and safety	NSDEL
NS *Guidelines for Disposal of Contaminated Solids in Landfills*	Attachments A, B & C	Soil containing contaminants is accepted for disposal at approved landfills provided guideline criteria are met.	NSDEL
NS Environment Act - Activities Designation Regulations	Division V - Industrial Approvals - Part 2 Construction Operation or reclamation of a pit or a topsoil removal operation.	Requirement for operations that will be providing fill and/or topsoil.	NSDEL

APPENDIX I APPLICABLE LEGISLATION AND GUIDELINES (con't)

Legislation	Section	Application to this Project	Responsible Agency
NS Special Places Protection Act	Section 8(1) - No person shall carry out explorations or make excavations on any land in the Province, including land covered with water, for the purpose of seeking heritage objects, without a heritage research permit.	Archaeological Resource Impact Assessment was completed and submitted to the Nova Scotia Museum.	Nova Scotia Museum
CBRM Building Bylaw	Section 2.5, 2.6, 2.15.1 and 2.15.2 - Building and demolition permits	Permits may be required for some of the work undertaken in this project.	CBRM
Fisheries Act	Sections 35 and 36 – Harmful alteration of habitat. Deposit of a deleterious substance.	Erosion control measures to be implemented. Emergency response requirements.	Department of Fisheries and Oceans EC
Migratory Birds and Convention Act Regulations	Section 6 – No person shall disturb, destroy, or take a nest, egg, nest shelter, eider duck shelter or duck box of a migratory bird except under authority of a permit.	Possible disturbance of migratory birds.	EC
	Section 35 - No person shall deposit or permit to be deposited oil, oil wastes or any other substance harmful to migratory birds in any waters or any area frequented by migratory birds.	Emergency response requirements.	EC

APPENDIX II RESPONSE TO PUBLIC COMMENTS REGARDING THE DRAFT SCREENING REPORT

Appendix II summarizes the most important comments and questions provided by the public on the draft screening report. To improve clarity, minor editorial changes have been made to some of the comments. Similar comments have been grouped.

A. *The scope of the remediation relates to most of the proposed remediation work. However, it does not carry the information relating to:*

- *Home fuel oil tanks which will be removed and possibly replaced. Will current oil tanks would be replaced with new ones? Considering the substantial environmental/financial implications of removal/replacement of oil tanks, this item should be given specific attention.*
- *At least one case where an addition to the main residence is being proposed and where substantive work is required to transform a full basement to a "crawl space.*

Section 3 Project Description has been modified to reflect these comments. Information on the characteristics of the tanks to be removed and replacement tanks, the qualification required of contractors removing fuel oil, and the tank disposal location has been added. The addition to the house and the conversion of the basement appear in the revised Section 3.

B. *Areas designated "hot spots" should require remediation, especially in cases of absentee landlords. Testing and remediation (if necessary) of new areas to be built on, if not previously tested, should be required.*

The environmental assessment addressed only those remediation activities contemplated by the proponent. Environment Canada, as a Responsible Authority under CEAA, is not in a position to expand the project subject to assessment by including sites not presently proposed for remediation. Through the distribution of the final screening report Environment Canada will bring the above comments to the attention of STPA and others involved in the Environmental Clean-up of the Muggah Creek Watershed.

C. *Are any tests required to determine if the soil is compatible with the landfill? Will the soil be disposed of as waste or used as top cover? The screening document could be more specific here.*

There is a lack of clarity on how the contaminated soil will be disposed off at the municipal solid waste disposal facility, MAID, and how (what route) will be used to transport the materials. Because this facility is in close proximity to residential areas, the public should be very clear on the methods of disposal, and proper procedures should be in place to ensure safe disposal. A road through the former coke ovens site is recommended.

Appendix 1 of the report lists legislation and guidelines relevant to the project, Included is the NS Guidelines for Disposal of Contaminated Solids in Landfills, Attachments A, B & C. Soil containing contaminants is accepted for disposal at

approved landfills, such as the MAID site, provided the guideline criteria are met. Testing was required for the remediation soils. It is now complete and criteria have been met.

The report has been modified to indicate that the soil will be disposed of at the Sydney Landfill portion of the MAID site and placed on top of the clay cap to form part of the two to three foot frost protection layer as part of the closure of the Sydney Landfill portion of the MAID site. Placement of the cover material at this site was previously assessed by Environment Canada and measures to mitigate adverse environmental effects have been identified and implemented.

Additional detail on the transport routes to the MAID site is presently not available as most property owners have not provided their approval for remediation to begin and location of the sites providing fill and topsoil have not been identified. This information is required before haul routes can be better described. For those members of the public wanting additional information as the project proceeds, a number of options are available--the community office established for the project, the Public Registry as required by CEAA, and existing public information sources established as part of the Environmental Clean-up of the Muggah Creek Watershed.

The assessment concluded that, following mitigation, construction of the temporary road at the east end of Frederick Street as proposed by the proponent would not result in significant risks to the public. Alternatives to that route, such as a road through the contaminated Coke Ovens site, were not assessed.

D. *Given that plans for each property are now available, the environmental assessment can now be more comprehensive and specific than that proposed in the draft. This is especially true in the face of the "agreement and waiver", certain articles of which, especially those relating to liability, are found to be untenable.*

Minor additional detail has been incorporated into the final screening report. Because the individual remedial action plans for each property are confidential and subject to change, they cannot be discussed in detail in this environmental assessment screening report. However, additional detail and comprehensiveness will be available as air monitoring requirements, HSPs, and EPPs are finalized. These information will be available to the public. Privacy requirements may impose some limitations on the release of information.

E. *There is a need for real time, full-time air-monitoring during the remediation. The soil of the properties tends to be very fine, and is easily carried on a slight breeze. This might have been noted in 2.3, "Geological Conditions" (probably inferred by "silt"). The high toxic levels of the soil in properties to be remediated necessitates monitoring on a much more consistent level than every six days.*

The particulate air monitoring should have more minimum requirements, such as data will be gathered each day at each property. There is too much discretion as it now reads.

Section 4.1.3 of the report has been modified following consideration of these concerns. The six-day monitoring frequency was established as part of the existing ambient air monitoring program. During the first month of remediation activities the sampling frequency will be changed to a three-day cycle. Also, Section 4.1.3 now more fully describes air monitoring that will be conducted specific to the remediation project. The data collected will provide both real-time and full-time results, will supplement the data provided through the ambient air monitoring, and will allow for immediate changes to project should air quality reach levels of concern. Full-time results will be 24-hour samples collected every three days. Sampling frequency may be reduced depending upon the initial results and levels of concern. Environment Canada will continue its involvement in the development of the project's air monitoring requirements.

F. *It should be noted that the Mi'kmaq have lands (about 10 acres) just below the former radar base, and as such they share direct concerns for the land in and around Whitney Pier.*

Membertou First Nation was provided with a copy of the draft environmental screening report for review and comment.

G. *I suggest that additional mitigation is required in relation to some of the remediation operations. The report recognizes that while soil removal might have adverse effects on air quality, it proposes that soil removal will have beneficial effects on residents. This appears to be contradictory. . . . I suggest that there is possible danger to residents and neighbours from the operation of soil removal. Similarly, but less so with traffic.*

Environment Canada largely agrees with this comment but suggests that it arises out of our attempt to summarize a great deal of information in Table 4. The text of the report does try to clarify the apparent contradiction by identifying a lowering of the long-term risk to human health due to improvements in soil quality while also recognizing the possible adverse health implications associated with changes to air quality resulting from removal of soil. Both Table 4 and the text identify potential adverse effects for the public resulting from traffic.

H. *Will the offer to temporarily relocate be in the RAPs? The willingness to temporarily relocate is vague. General conditions for relocation (unsafe due to construction equipment, resident oversensitive to dust or noise etc.) should be stated.*

I suggest that vulnerable directly-affected residents and vulnerable neighbours be relocated during danger periods. Possibly, this could be on the advice of a family physician. Concern must be given to neighbours in this regard. The remediation operations have a wider responsibility than the residences directly affected. This would be true of any similar "ordinary" operation.

Information on temporary relocation is admittedly vague. The reasons for this are the same as those listed in response to Comment D. The individual RAPs will outline the need for temporary relocation for each property. Decisions will be made on a case-by-case basis as RAPs are finalized. Environment Canada will participate

in decisions relating to temporary relocations through its follow-up responsibilities as described in Section 5. Environment Canada will likely rely on the expert advice provided by other government departments in determining the need for relocation. Neighbors will be considered, but currently other mitigation measures are likely to adequately protect the health and safety of neighbors. Risk to the safety, rather than risk to health from exposure to contaminants, is likely to be the more important factor in determining the need for relocation.

I. *Garden areas should receive more than 10 cm topsoil. Topsoil replacement should be 25 cm.*

The proponent has agreed to this suggestion and topsoil replacement for garden areas will be at least 25 cm.

J. *Regarding Cumulative Environmental Effects - Steel Plant Demolition, I am pleased that EC will be reviewing the demolition plans for the SYSCO site in reference to the remediation. Unfortunately, no environmental assessment has been carried out and we have already seen an instance where stacks containing asbestos were taken down without proper consideration for the surrounding residences and an elementary school.*

Environment Canada wishes to make clear to readers that our review will be only in relation to the potential for cumulative adverse air quality effects resulting from the both the remediation program and SYSCO demolition activities.

K. *Not mentioned as a health factor in the remediation and the "cumulative environmental effects" is the effect of long-term stress on all the residents in the general remediation area, including both owners of properties to be remediated and their neighbours. Some mitigation measures which might help to alleviate stress would be:*
1. Clear, concise and easily accessible information on measures required to ensure health and safety. This combined with the Public Registry material would give reassurance as well as provide information of the rights of the people of the neighbourhood.
2. I understand that there will be an inspection agency contracted. The financial and environmental interests of EC would warrant inspections by EC.
3. Clear and accessible criteria for temporary relocation.
4. Specific consideration for the health and safety of children, especially how and where they may be cared for during remediation.

Indirect influences on health resulting from stress were not examined as part of this assessment. Nevertheless the mitigation measures suggested above are largely in place. As previously mentioned, public access to project information is provided for by the community office established for the remediation project, the Public Registry as required by CEAA, and existing public information sources established as part of the Environmental Clean-up of the Muggah Creek Watershed.

Section 5 describes Environment Canada's ongoing involvement in the project including the arrangement for inspection services.

Clear criteria for temporary relocation cannot be provided as there are none available. Decisions will be made on a case-by-case basis while relying of professional judgement.

The health and particularly the safety of children have been and will continue to be special concerns.

L. *The three kilometer zone is referred to as study for "comparison purposes". The JAG motion requested the work in the NOCO area as well as areas in all directions from the site. The three kilometer study was carried out to determine if contaminants were present in this zone.*

The introductory phrase "for comparison purposes" has been removed from the report.

M. *The reference to "some minor long-term improvement in water quality", as qualified as it is, may be an overstatement. No measurable effect would be expected. The reference to "socio-economic condition will improve" is also overstated. There should be no noticeable improvement.*

The finding on water quality has been reconsidered and the expectation for long-term improvements has been removed from the report. The improvements to environmental quality of the properties to be remediated is likely to result in some beneficial socio-economic effects. The assessment does not evaluate the significance of this or other beneficial effects.

N. *The report should also say the trucks will be cleaned. Dirt falling off trucks carrying waste is not desirable. The bullet on soils accumulating on streets should state "any soil accumulating on streets will be removed". Dirt from a remediation project should not accumulate on streets.*

The report has been modified and now states that standard construction procedures and street cleaning will be employed to keep the trucks clean and minimize the accumulation of soils on public roadways.

O. *There is no mention of monitoring for noise. Noise is a parameter that can easily be monitored.*

Noise can be easily monitored using sound meters. However, applying criteria for acceptability of noise levels when sources are intermittent and short-term is more difficult. As is done with other short-term construction projects, Environment Canada will be relying on public complaints and the response by the proponent to those complaints to determine if additional protection measures are required.

P. *In relation to the demolition and removal activities on the Coke Ovens Site, is there a mechanism to review schedule changes and ensure the chance of cumulative effects doesn't increase due to such changes?*

EC has a environmental assessment follow-up program for the above activities on the Coke Ovens site. That program ensures that we are aware of changes to project schedules.

Q. *In relation to the Sydney Landfill Leachate Management Project, there is a reference to no complaints about noise. There have been complaints about traffic (which relates to noise), as well as complaints about dust and dirt on the roadways.*

EC is aware of complaints about noise/traffic complaints from the landfill project but is unaware of complaints coming from the east end of Frederick Street. The statement in the draft report was intended to apply only to that area. The report has been modified slightly to add clarity.

R. *In relation to the Steel Plant Access Road and Bulk commodities Terminal, what happens if schedules change? The chance of cumulative effects could increase. Will schedules be monitored?*

Due to its *Fisheries Act* and Environmental Clean-up of the Muggah Creek Watershed responsibilities, Environment Canada has been kept aware of plans for these projects. These mechanisms, plus or ongoing contact with NSDEL, will allow for ongoing monitoring of schedules.

APPENDIX III LIST OF ACRONYMS

AAAL	Ambient Air Action Level
CBRM	Cape Breton Regional Municipality
CCME	Canadian Council of Ministers of the Environment
CEAA	Canadian Environmental Assessment Act
EC	Environment Canada
EPA	US Environmental Protection Agency
EPP	Environmental Protection Plan
HNCs	Heterocyclic Nitrogenous Compounds
HRA	Health Risk Assessment
HSP	Health and Safety Plan
JAG	Joint Action Group
MAID	Municipal-Ash-Industrial Disposal
NSDEL	Nova Scotia Department of Environment and Labour
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PM_{10}	Particulate Matter Less Than or Equal to 10 Microns
PWGSC	Public Works and Government Services Canada
RAP	Remedial Action Plan
STPA	Sydney Tar Ponds Agency
TPH	Total Petroleum Hydrocarbons
TSP	Total Suspended Particulate